

From Stroke Prevention to Health Gain

Module 2: Effectiveness of Interventions

Research shows compelling results

In this module, **health practitioners** will be able to review their own program against the research findings. They will also find criteria to use when planning interventions.

Data source for this module

The authors conducted a systematic review of reviews to evaluate the effectiveness of community-based stroke prevention programs. They searched 6 electronic databases (MEDLINE, CINAHL, EMBASE, BIOSIS, PsycINFO, and Sociological Abstracts), as well as 21 public health and health promotion journals — all for the years 1985 to 2001. The articles were reviewed and assessed for the following aspects.

- The topic was relevant to public health in Canada.
- The review addressed the effectiveness of a community-based intervention or program focussed on changing multiple risk factors.
- There was evidence on outcomes that addressed multiple risk factors for stroke prevention.

Of the 14 reviews considered relevant, only those rated as being either ‘strong’ (4), or ‘moderate’ (6) for methodological quality were included in data extraction and analysis.

The findings

As mentioned above, only the results of 10 reviews were considered for this analysis — 4 were strong, and 6 moderately strong. Table 5.1 displays the distribution of findings according to outcome studied (from knowledge through behaviour to health outcome) and the strength of the review. Each “S” represents a review rated methodologically strong; each “M” represents a review rated moderate. So, for example, four strong reviews found a promising or positive effect on blood pressure and two moderately strong reviews found no effect.

Four things come to mind on examining this table:

- The stronger reviews appear more likely to find a promising or positive effect
- The greatest weight of evidence is for smoking, blood pressure and cholesterol.
- There are very few reviews of the longer-term health outcomes (morbidity, mortality) of community interventions.

Full report

Mills, C., Manske, S., Dobbins, M., & Cameron, R. *From Stroke Prevention to Health Gain, Final Report.* CCS/NCIC Centre for Behavioural Research and Program Evaluation, University of Waterloo, Waterloo, Ontario, 2002.

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(Full report available at <<http://www.opc.on.ca>>.)

This research makes the case for integrating primary stroke prevention into a broader strategy for primary prevention of chronic disease. In exploring various approaches, it focuses on the following shared risk factors, which are both modifiable and amenable to a population-based approach.

- hypertension
- obesity
- smoking
- physical inactivity
- diabetes
- excessive alcohol use

Other modules in this series

Module 1. Burden of Stroke and Scope for Prevention

Module 2. Effectiveness of Interventions

Module 3. Current Approaches

Module 4. Chronic Disease Prevention Models

Module 5. Rationale for Integrated Approach

Table 5.1 [from full report]: Findings of Reviews Rated Strong and Moderate

Outcome Assessed	Conclusions			
	Positive	Promising	No effect	Unknown
Knowledge		S		
Smoking	S	SS	MMMM	SM
Physical activity	M	SS	M	MM
Diet	M	S		MMM
Weight	S	S	MM	M
Blood pressure	S	SSS	MM	M
Cholesterol	S	SSSMM	M	
CVD risk	S	M		
CVD morbidity			S	S
CVD Mortality		M	SS	S

Note: S = Strong; M= moderate.
There were no negative findings.

The high incidence of positive or promising effects on behaviour and intermediate health outcomes such as changes in blood pressure and cholesterol is persuasive. These findings are supported by the conclusions of other processes internationally, such as the US Task Force on Community Preventive Services,^{*85} Australia's National Public Health Partnership^{*86} and the World Health Organization.^{*87}

The authors' assessment is that the best available research evidence supports the effectiveness of comprehensive, community-based prevention on knowledge, behaviour and important intermediate health outcomes.

It is also *suggestive* that the impact on intermediate health outcomes translates eventually into longer term health benefits in morbidity and mortality.

Criteria for an effective intervention

In assessing various studies, the authors used specific criteria. Based on these criteria, the following is a list of aspects to keep in mind when planning or revising your own chronic disease prevention initiative.

Clearly define these aspects of your initiative.

- the population for which you are trying to create results
- the activities designed to promote and achieve a specific outcome for individuals, communities or the population (may include interventions, strategies or policies, including lobbying, coalitions, and legislation)
- a system to track both the health outcomes and the intermediate steps to achieve them (outcome indicators can be at the individual, community or population level).

Criteria for primary studies

If your intervention includes research, be sure to cover the following aspects to ensure a high methodological quality.

...for quantitative studies

- research design (most rigorous design given the research question)
- study sample (generalizability)
- participation rate
- sources of bias (confounders, respondent bias)
- data collection (measurement of independent and dependent variables.)
- follow-up/attrition rates
- data analysis

...for qualitative studies

The following items should also be assessed in addition to those noted above.

- suitability of methodology/paradigm to the research question
- sampling (selection of participants/settings/documentation)
- clear description of context, data collection and data analysis
- rigour:
 - audit trail (complete documentation of steps taken)
 - some coding (to ensure accuracy) by two or more coders, if appropriate
 - deviant case analysis (seeking authors with different perspectives —negative cases)
 - respondent validation (member checking)
- triangulation (using more than one method or data source, to get a more well-rounded picture)
- reflexivity (critical reflection on research process and researcher's own role, regarding researcher and the research process)
- relevance (credibility, applicability, transferability)

*** For all references in this module, please refer to "References" in full report.**